

Changkat Changi Secondary School
Physics Department
Upper Secondary

Name: _____ () Class: _____ Date: _____

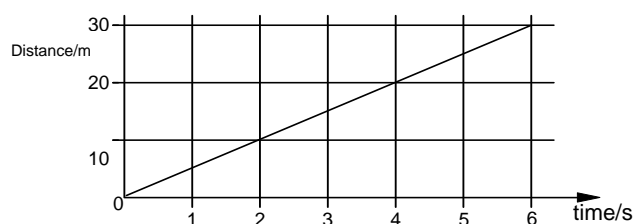
TOPIC : Kinematics

WORKSHEET 2.2

20

A. MULTIPLE CHOICE QUESTIONS (10 marks)

1. The graph below shows the distance travelled by a car over 6 seconds.

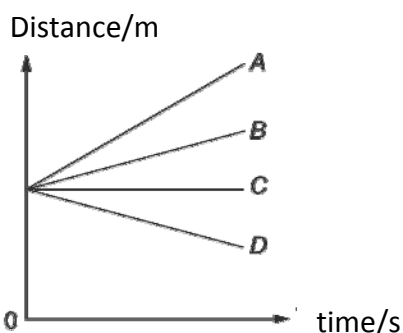


What is the speed of the car?

- A** 30 ms^{-1} **B** 20 ms^{-1} **C** 15 ms^{-1} **D** 5 ms^{-1}

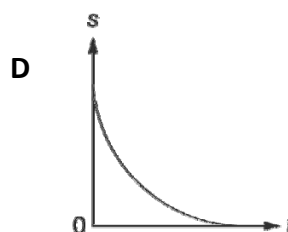
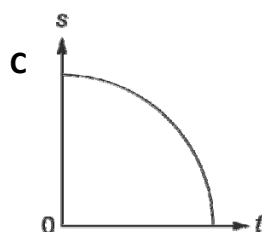
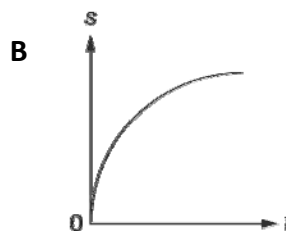
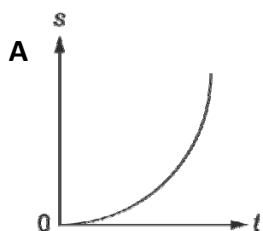
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2. Graph below shows the distance-time graph of four objects. Which object is moving at the greatest speed?



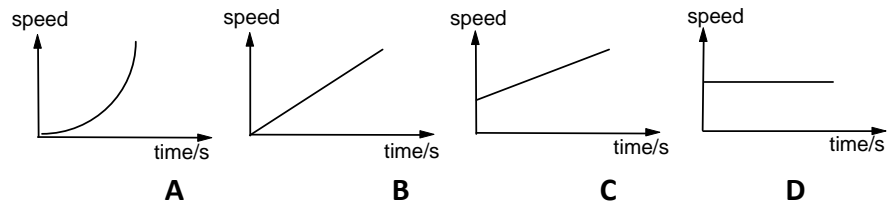
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3. A car is moving from rest and moves with an increasing speed. Which distance time graph best describes this?



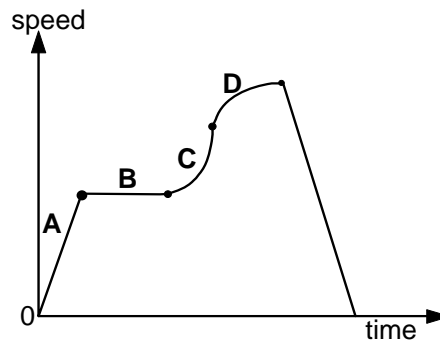
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4. Which is the speed-time graph of a body moving from rest with a constant acceleration?



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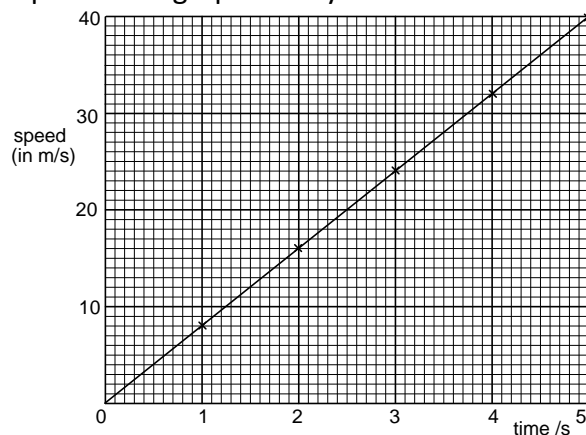
5. The graph shows how the speed of an object changes with time.



Which section of the graph shows the object moving with an increasing acceleration?

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6. The speed-time graph of a cyclist is shown.



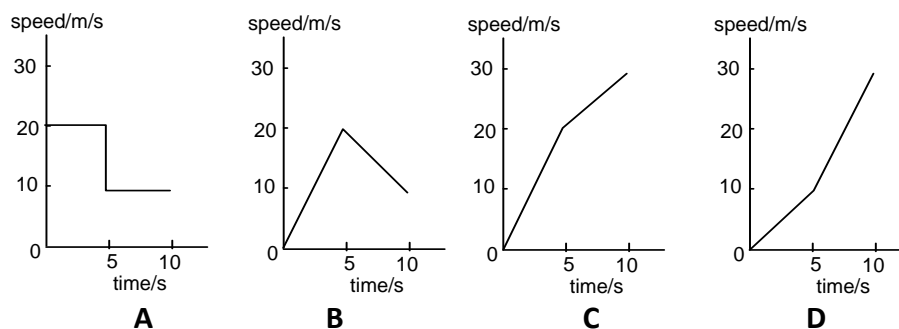
What was the average acceleration of the cyclist?

- A** 0.125 ms^{-2} **B** 8 ms^{-2} **C** 1.125 ms^{-2} **D** 100 ms^{-2}

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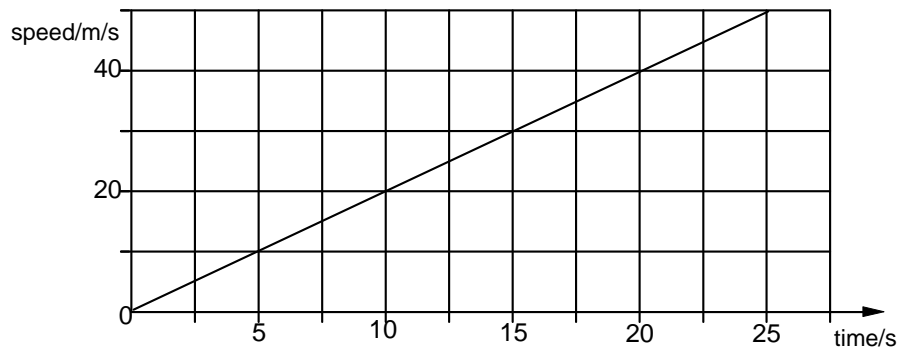
7. A skier is travelling downhill. The acceleration on hard snow is 4 ms^{-2} and on soft snow is 2 ms^{-2} .

Which graph shows the motion of the skier when moving from hard snow to soft snow?



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8. The speed-time graph is for an object moving with constant acceleration.

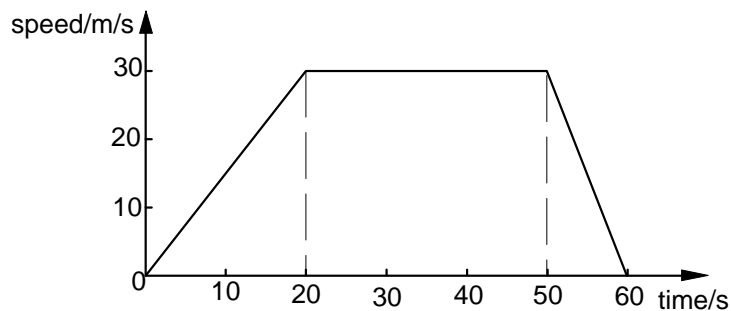


How far does the object move in 20 s?

- A** 0.5 m **B** 2.0 m **C** 400 m **D** 800 ms

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9. The graph below shows the motion of a car which starts from rest and accelerates uniformly for 10 seconds until its speed is 30 ms^{-1} . Travels at this speed for 30 s and then decelerates uniformly to rest in further 10 s.



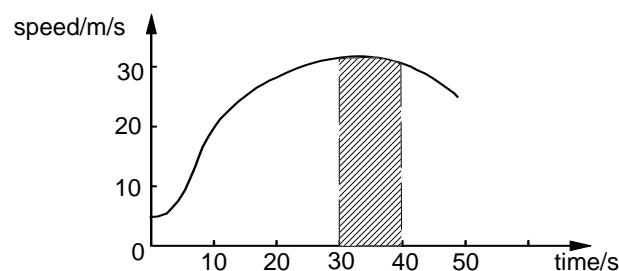
What is the total distance travelled by the car, in metres?

- A** 600 **B** 900 **C** 1200 **D** 1350

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10. The diagram shown is a speed-time graph of a car. The shaded area relates to the period 30 to 40 s.

Which one of the following is represented by the shaded area?

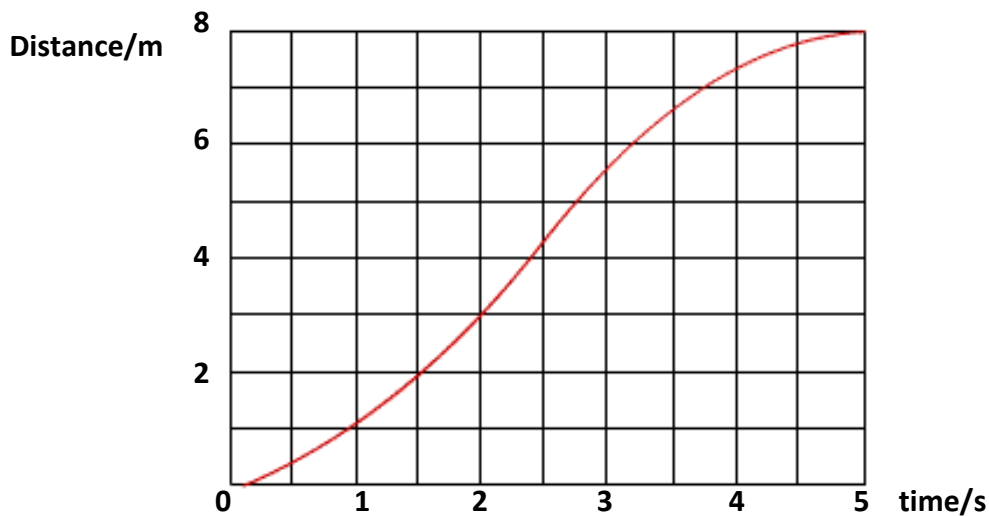


- A** acceleration **B** average speed
C change of speed **D** distance

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B. STRUCTURED QUESTIONS (10 marks)

11. The graph below shows the distance time graph of a runner in 5 s.



(a) Describe the speed of the runner from:

i. 0 to 2 seconds

ii. 3 to 5 seconds

(2 marks)

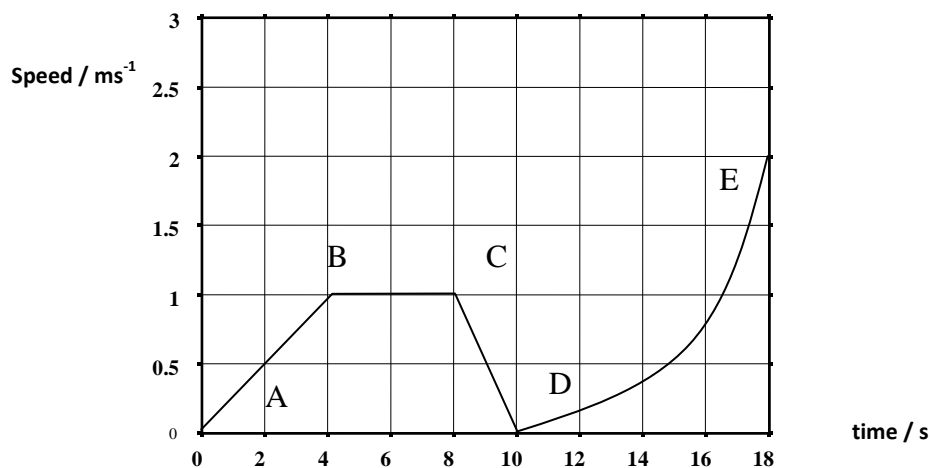
(b) What is the distance travelled by the runner at 3.5s? _____

(1 mark)

(c) In the graph above, plot another line of a runner who ran from start to 6 m in 5 seconds at a constant rate. Label this as runner B.

(2 mark)

12. The speed-time graph below refers to a toy car moving along a straight track.



(a) In which section of the graph is the acceleration constant and positive? _____ (1 mark)

(b) Calculate the acceleration in (a). (2 marks)

(c) Which section of the graph represents zero acceleration? _____ (1 mark)

(d) What is the highest speed of the car? _____ (1 mark)